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ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
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FRANKFORT, KENTUCKY 40601-1190
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LEONARD K. PETERS
SECRETARY

FACT SHEET

**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
INTO WATERS OF THE COMMONWEALTH**

KPDES No.: KY0029416 **Permit Writer:** Dan Juett **Date:** September 14, 2009
AI No.: 2141

1. **SYNOPSIS OF APPLICATION**

a. Name and Address of Applicant

Louisville & Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville, Kentucky 40203

b. Facility Location

McNeely Lake STP
Rod & Reel Lane
Louisville, Jefferson County, Kentucky

c. Description of Applicant's Operation

Public owned treatment works, POTW, facility engaged in the collection, treatment, and disposal of sanitary wastewater.

d. Design Capacity

0.205 MGD

e. Description of Existing Pollution Abatement Facilities

Treatment consists of: manual bar screen, activated sludge, aerobic digestion, chlorine disinfection, dechlorination, and discharge. Sludge Solids are thickened and hauled to MFWTP for disposal.

f. Permitting Action

This is a reissuance of a minor KPDES permit for a public owned treatment works, POTW, treatment plant serving commercial (non-industry) and residential units.

2. **RECEIVING WATER**

a. Name/Mile Point

Facility discharges to an unnamed tributary at mile point 0.60 to Pennsylvania Run at mile point 2.70.

b. Stream Segment Use Classification

Pursuant to 401 KAR 5:026, Section 5, the unnamed tributary at mile point 0.60 carries the following classifications: warm water aquatic habitat, primary contact recreation, secondary contact recreation, and domestic water supply.

c. Stream Segment Categorization

Pursuant to 401 KAR 5:030, Section 1 the unnamed tributary at mile point 0.60 is categorized as a "High Quality Waters".

d. Stream Low Flow Condition

The 7-day, 10-year low flow and harmonic mean conditions of the unnamed tributary at mile point 0.60 are 0.0 and 0.1 cfs, respectively.

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Serial Number 001 - Sanitary Wastewater (Design Flow = 0.205 MGD)

Effluent Characteristics	Reported Discharge		Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Flow (MGD)	0.084	0.182	Report	Report	401 KAR 5:065, Section 2(8)
CBOD ₅ (mg/l)	4.34	8	15	22.5	401 KAR 5:031, Section 4 401 KAR 5:045, Sections 3 and 5
TSS (mg/l)	10.85	27	30	45	401 KAR 5:031, Section 4 401 KAR 5:045, Sections 2 and 3
Fecal Coliform (N/100 ml)	7.43	30.4	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
<i>Escherichia Coli</i> (N/100 ml)	NR	NR	130	240	401 KAR 5:031, Section 7 401 KAR 5:045, Section 4 401 KAR 5:080, Section 1(2)(c)2
Ammonia Nitrogen (as mg/l N)					
May 1 - October 31	0.508	1.94	4.0	6.0	401 KAR 5:031, Section 4
November 1 - April 30	0.409	1.75	10.0	15.0	401 KAR 5:045, Sections 3 and 5
Dissolved Oxygen (mg/l) (minimum)	7.07	7.6	Not less than 7.0		401 KAR 5:031, Section 4 401 KAR 5:045, Sections 3 and 5
pH (standard units)	6.73	7.6	6.0 (min)	9.0 (max)	401 KAR 5:031, Section 4 401 KAR 5:045, Section 4
Total Residual Chlorine (mg/l)	<0.010	<0.010	0.011	0.019	401 KAR 5:031, Section 4(k)
Total Nitrogen (mg/l)	N/A	N/A	Report	Report	401 KAR 5:065, Section 2(8)

3. REPORTED DISCHARGE AND PROPOSED LIMITS - SANITARY FACILITY

Serial Number 001 - Sanitary Wastewater (Design Flow = 0.205 MGD)

Effluent Characteristics	Reported Discharge		Proposed Limits		Applicable Water Quality Criteria and/or Effluent Guidelines
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Total Phosphorus (mg/l)	2.9	4.63	1.0	2.0	401 KAR 5:065, Section 2(8) 401 KAR 5:080, Section 1(2)(c)2

The data contained under the reported discharge columns is not from the renewal application, but rather from the analysis of the DMR data that has been reported during the term of the previous permit.

The abbreviation CBOD₅ means Carbonaceous Biochemical Oxygen Demand (5-day).

The abbreviation TSS means Total Suspended Solids.

The abbreviation NR means not reported on the Discharge Monitoring Report (DMR).

The abbreviation NR means not reported on the Discharge Monitoring Report (DMR).

The effluent limitations for CBOD₅ and TSS are Monthly (30 day) and Weekly (7 day) Averages.

The effluent limitations for *Escherichia Coli* are thirty (30) day and seven (7) day Geometric Means.

Total Nitrogen is to be reported as the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen.

4. **METHODOLOGY USED IN DETERMINING LIMITATIONS**

a. Serial Number

Outfall 001 Sanitary Wastewater (Design Flow = 0.205 MGD)

b. Effluent Characteristics

Flow, CBOD₅, TSS, Fecal Coliform Bacteria, *Escherichia Coli*, pH, Ammonia Nitrogen, Dissolved Oxygen, Total Residual Chlorine (TRC), Total Phosphorus, and Total Nitrogen.

c. Pertinent Factors

The wastewater treatment plant is a public owned treatment works (POTW) facility. The POTW treats sanitary wastewater from residential and commercial (non-industry) activities.

The Division's Total Maximum Daily Load (TMDL) for Floyds Fork was approved by the United States Environmental Protection Agency Region IV on September 4, 1997. The TMDL called for the elimination of this wastewater treatment plant when sewers became available. As sewers are not yet available elimination has not occurred however Floyds Fork remains impaired for nutrients.

d. Monitoring Requirements

Effluent sampling shall be conducted at the nearest point after final treatment but prior to discharge to or mixing with the receiving waters.

Effluent Flow monitoring shall be conducted continuously by recorder.

CBOD₅ (Effluent) and TSS (Effluent) monitoring shall be conducted once per week by 24 hour composite sampling.

Ammonia Nitrogen, Total Phosphorus and Total Nitrogen shall be monitored once per week by 24 hour composite sampling.

Escherichia Coli, pH, Dissolved Oxygen and Total Residual Chlorine shall be monitored once per week by grab sample.

e. Justification of Conditions

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Escherichia Coli and Fecal Coliform Bacteria

The limits for *Escherichia Coli* are consistent with the requirements of 401 KAR 5:031, Section 7, 401 KAR 5:045 Section 4 and 401 KAR 5:080, Section 1(2)(c) 2.

The removal of Fecal Coliform Bacteria is consistent with the requirements of 401 KAR 5:080k Section 1 (2) (c)2. Although Fecal Coliform Bacteria has been used as an indicator of fecal contamination, it does contain other species that are not necessarily fecal in origin. EPA recommends *Escherichia Coli*, which is specific to fecal material from warm-blooded animals, as the best indicator of health risk from contact with recreational waters. Therefore, it is the "Best Professional Judgment "BPJ" of the Division of Water that *Escherichia Coli* replace Fecal Coliform Bacteria on this permit.

Flow (Effluent)

The monitoring requirements for this parameter are consistent with the requirements of 401 KAR 5:065, Section 2(8).

CBOD₅, Ammonia Nitrogen, and Dissolved Oxygen

The limits for these parameters are consistent with the requirements of 401 KAR 5:031, Section 4, and 401 KAR 5:045, Sections 3 and 5. Section 4 of 5:031 establishes water quality criteria for the protection of Kentucky's waters. Section 5 of 5:045 requires biochemically degradable wastewaters to receive treatment in excess of secondary treatment if the Cabinet determines that the receiving water would not satisfy applicable water quality standards as a result of a facility discharge or discharges from multiple facilities.

Total Suspended Solids

The limits for this parameter are consistent with the requirements of 401 KAR 5:031, Section 4 and 5:045, Sections 2 and 3. Section 4 of 5:031 establishes water quality criteria for the protection of Kentucky's waters. Sections 2 and 3 of 5:045 require biochemically degradable wastewaters to receive secondary treatment.

pH

The limits for these parameters are consistent with the requirements of 401 KAR 5:031, Section 4 and 5:045, Section 4. Section 4 of 5:031 establishes water quality criteria for the protection of Kentucky's waters. Section 4 of 5:045 establishes the acceptable levels of these parameters for biochemically degradable wastewaters.

Total Residual Chlorine

The limits for these parameters are consistent with the requirements of 401 KAR 5:031, Section 4.

Total Phosphorus

The limits for phosphorus are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c) 2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Practicable Technology Currently Available" (BPT) and "Best Available Technology Economically Achievable" (BAT) requirements for these pollutants.

Total Nitrogen

The monitoring requirements for this parameter are consistent with the requirements of 401 KAR 5:065, Section 2(8) (a). Total Nitrogen is TKN (as N) and nitrate/nitrite (as N).

5. **ANTIDEGRADATION**

The conditions of 401 KAR 5:029, Section 1 have been satisfied by this permit action. Since this permit action involves reissuance of an existing permit, and does not propose an expanded discharge, a review under 401 KAR 5:030 Section 1 is not applicable.

6. **PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS**

The permittee will comply with all effluent limitations by the effective date of the permit.

7. **PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE**

Connection to a Regional Facility

The Division of Water considers package wastewater treatment plants treating domestic wastewaters as temporary solutions that shall be eliminated by connection to a regional wastewater treatment facility when sewers of sufficient capacity become available. "Available" is defined as being located within the planning area and within one (1.0) miles along the most feasible route of connection to sewers of sufficient capacity to carry the additional flow. This requirement to eliminate the package treatment plant serving this facility is consistent with the requirements of 401 KAR 5:005, Section 4(6) and 401 KAR 5:002, Section 1(21).

7. **PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE**

Disposal of Non-Domestic Wastes

The pass through or non-treatment by the wastewater treatment plant of chemicals or compounds which may injure, be chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life is not desirable. Materials such as acids, caustics, herbicides, household chemicals or cleansers, insecticides, lawn chemicals, non-biodegradable products, paints, pesticides, pharmaceuticals, and petroleum based products may not be treatable by the wastewater treatment plant and should not be introduced and other environmentally sound methods for disposal should be utilized. The permittee should educate users of its system that introduction of such chemicals or compounds could result in an adverse environmental impact and provide the users with alternative disposal measures. This requirement is consistent with the requirements of 401 KAR 5:065, Section 1(5) and 401 KAR 5:080, Section 1(c)(2)c.

Certified Operators

Pursuant to 401 KAR 5:010, Section 2(1) wastewater systems shall be operated under the supervision of a certified operator who holds a Kentucky Certificate equivalent to the class of system being supervised. All other operators employed by the system shall hold a Kentucky Certificate or shall be in the process of obtaining a Kentucky Certificate.

Pursuant to 401 KAR 5:010, Section 8 wastewater systems shall be classified as follows:

- Class I: Systems with a design capacity of less than or equal to 50,000 gpd
- Class II: Systems with a design capacity of more than 50,000 gpd but less than or equal to 2.0 MGD
- Class III: Systems with a design capacity of more than 2.0 MGD but less than or equal to 7.5 MGD
- Class IV: Systems with a design capacity of more than 7.5 MGD

Section 2(2) of 401 KAR 5:010 require the certified operator to be reasonably available if not physically present while the system is operating.

Section 2(3) of 401 KAR 5:010 require the Kentucky Certificate shall be displayed on the wall of wastewater system office.

Outfall Signage

As a member of ORSANCO (Ohio River Valley Sanitation Commission) the Commonwealth of Kentucky through the Division of Water implements a requirement that the permittee post a permanent marker at each discharge point to the Ohio River. It is the Best Professional Judgment of the Division of Water, 401 KAR 5:080, Section 1(2)(c)2, that all permittees post a marker at all discharge locations and/or monitoring points. The ORSANCO requirements for the marker specify it to be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and is to be posted as near as possible to the actual sampling location.

8. **PERMIT DURATION**

Five (5) years. This facility is in the Salt/Licking Basin Management Unit as per the Kentucky Watershed Management Framework.

9. **PERMIT INFORMATION**

The application, draft permit, fact sheet, public notice, comments received, and additional information is available from the Division of Water at 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601.

10. **REFERENCES AND CITED DOCUMENTS**

All material and documents referenced or cited in this fact sheet are a part of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the person listed below.

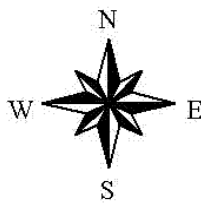
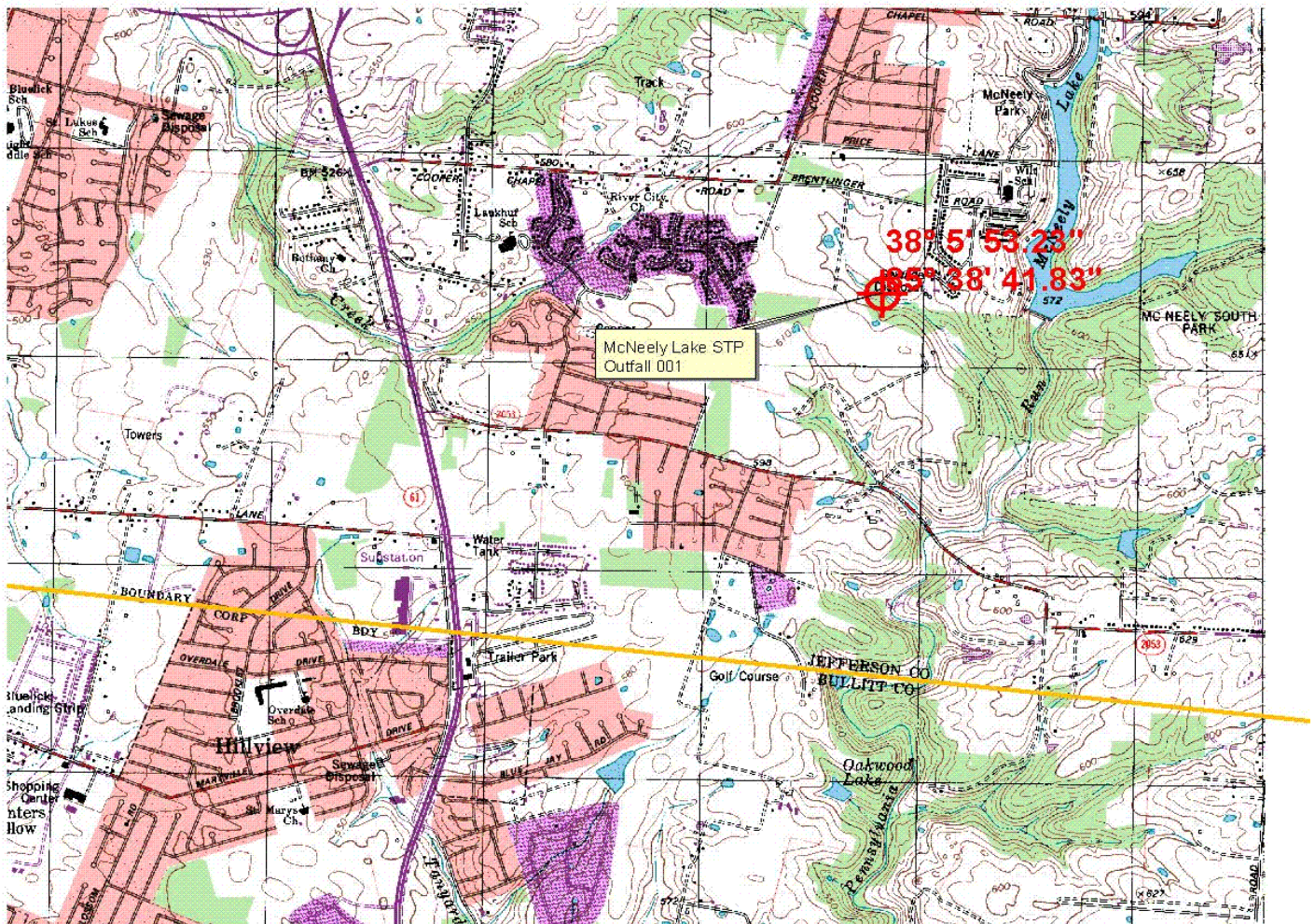
11. **CONTACT**

For further information on the draft permit or comment process, contact the individual identified on the Public Notice or the Permit Writer - Dan Juett at (502) 564-8158, extension 593, or email Dan.Juett@ky.gov.

12. **PUBLIC NOTICE INFORMATION**

Please refer to the attached Public Notice for details regarding the procedures for a final decision, deadline for comments and other information required by 401 KAR 5:075, Section 4(2)(e).

Louisville & Jefferson County MSD McNeely Lake STP





PERMIT

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601
Printed on Recycled Paper

A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 001 - Sanitary Wastewater (Design Flow = 0.205 MGD)

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	(lbs/day)		Other Units (Specify)			
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	N/A	N/A	Continuous	Recorder
CBOD ₅ (mg/l)	25.6	38.5	15.0	22.5	1/Week	24 Hr Composite
TSS (mg/l)	51.3	76.9	30	45	1/Week	24 Hr Composite
Ammonia Nitrogen (as mg/l N)						
May 1 - October 31	6.84	10.3	4.0	6.0	1/Week	24 Hr Composite
November 1 - April 30	17.1	25.6	10.0	15.0	1/Week	24 Hr Composite
<i>Escherichia Coli</i> (N/100 ml)	N/A	N/A	130	240	1/Week	Grab
Dissolved Oxygen (mg/l) (minimum)	N/A	N/A	Not less than	7.0	1/Week	Grab
pH (standard units)	N/A	N/A	6.0 (min)	9.0 (max)	1/Week	Grab
Total Residual Chlorine (mg/l)	N/A	N/A	0.011	0.019	1/Week	Grab
Total Phosphorus (mg/l)	N/A	N/A	1.0	2.0	1/Week	24 Hr Composite
Total Nitrogen (mg/l)	N/A	N/A	Report	Report	1/Week	24 Hr Composite

The abbreviation CBOD₅ means Carbonaceous Biochemical Oxygen Demand (5-day).

The abbreviation TSS means Total Suspended Solids.

The abbreviation N/A means Not Applicable.

The effluent limitations for CBOD₅ and TSS are Monthly (30 day) and Weekly (7 day) Averages.

The effluent limitations for *Escherichia Coli* are thirty (30) day and seven (7) day Geometric Means.

Total Nitrogen is to be reported as the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with all requirements on the effective date of this permit.

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PART II
Page II-1
Permit No.: KY0029416
AI NO.: 2141

STANDARD CONDITIONS FOR KPDES PERMIT

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

PART III

OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported on a preprinted Discharge Monitoring Report (DMR) Form that will be mailed to you. The completed DMR for each monitoring period must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

Division of Water
Louisville Regional Office
9116 Leesgate Road
Louisville, Kentucky 40222-5084
ATTN: Supervisor

Energy and Environmental Cabinet
Dept. for Environmental Protection
Division of Water/KPDES Branch
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 through 5:086, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

C. Sludge Disposal

The disposal or final use of sewage sludge generated during the treatment of domestic sewage in a treatment works shall be disposed of in accordance with federal requirements specified in 40 CFR Part 503 and state requirements specified in Division of Waste Management regulations 401 KAR Chapter 45.

D. Certified Operators

This wastewater system shall be operated under the supervision of a Class II Kentucky Certified Operator who shall be reasonably available at all times. All other operators employed by the system shall hold a Kentucky Certificate or shall be in the process of obtaining a Kentucky Certificate. The certificates of each operator shall be prominently displayed on the wall of the system office.

E. Outfall Signage

The permittee shall post a permanent marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and shall be posted as near as possible to the actual sampling location.

PART III

OTHER REQUIREMENTS

F. Connection to a Regional Facility

The Division of Water considers package wastewater treatment plants treating domestic wastewaters as temporary solutions that shall be eliminated by connection to a regional wastewater treatment facility when sewers of sufficient capacity become available. This permitted activity is within the planning area of Louisville and Jefferson County Metropolitan Sewer District. Therefore the package treatment plant serving this facility shall be eliminated and the facility connected to the regional facility when the following conditions exist:

1. Sewers with sufficient integrity and capacity to carry the additional flow are available within one (1.0) mile of the facility. Such additional flow will not result in new or expanded Sanitary Sewer Overflows or Combined Sewer Overflows.
2. The regional facility has sufficient capacity to assimilate the additional wastewater flow and strength. The regional facility can be not under a sewer sanction or tap on ban.

During the term of this permit should the Division of Water determine that the aforementioned conditions exist the permittee shall receive written notification that connection to the regional facility and elimination of the package treatment plant shall occur prior to the expiration of this permit. This permit shall not be reissued unless the permittee can demonstrate to the Division of Water that the aforementioned conditions do not exist, or that natural or man-made obstructions exist, or the cost of connection and elimination would necessitate the closing of permitted activity.